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LAM, VINH TANG	
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Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary	Application No.	Applicant(s)	
	10/531,035	JOHNSON, MARK THOMAS	
	Examiner	Art Unit	
	VINH LAM	2629	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE *3* MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *23 August 2010*.

2a)☐ This action is **FINAL**. 2b)☒ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1-14* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *1-14* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☒ The drawing(s) filed on *12 April 2005* is/are: a)☒ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☒ All b)☐ Some * c)☐ None of:

1.☒ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☐ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☐ Information Disclosure Statement(s) (PTO/SB/08) Paper No(s)/Mail Date _____.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____.
5) ☐ Notice of Informal Patent Application
6) ☐ Other: _____.

DETAILED ACTION

Claim Rejections - 35 USC § 112

The following is a quotation of the **first paragraph** of 35 U.S.C. 112:

> The specification shall contain a written description of the invention, and of the manner and process of making and using it, in such full, clear, concise, and exact terms as to enable any person skilled in the art to which it pertains, or with which it is most nearly connected, to make and use the same and shall set forth the best mode contemplated by the inventor of carrying out his invention.

1. Claims **2** and **4-9** are rejected under 35 U.S.C. 112, first paragraph, as failing to comply with the written description requirement. The claim(s) contains subject matter which was not described in the specification in such a way as to reasonably convey to one skilled in the relevant art that the inventor(s), at the time the application was filed, had possession of the claimed invention.

Regarding Claims **2** and **4-9**, the speciation as originally filed has failed to provide support for the recitation of "...***a/the running total*...". The specification does not reasonably convey one skill in the art how to make or use applicant claimed invention for "...***a/the running total*...".

Regarding Claim **2** , the speciation as originally filed has failed to provide support for the recitation of "...***updating*** ...". The specification does not reasonably convey one skill in the art how to make or use applicant claimed invention for "...***updating*** ...".

The following is a quotation of the **second paragraph** of 35 U.S.C. 112:

> The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

2. Claims **2** and **4-9** are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

The limitation of Claims **2** and **4-9** "...***a/the running total*** ..." is not clear.

What does "...***a/the running total*** ..." mean?

Does "...***a/the running total*** ..." mean a/the summation of the products of the voltage values and their corresponding durations as defined and illustrated in the Specification's [0054] and FIG. 3 respectively?

The above limitation is not only rejected under 35 U.S.C. 112 2nd ¶ but also invoked 35 U.S.C. 112 1st ¶ since there is no disclosure of "...***a/the running total*** ..." in the originally filed specification.

To further advance prosecution, the Examiner interprets "...***a/the running total*** ..." in agreement with the Specification and Drawings.

The limitation of Claim **2** "...***updating***..." is not clear.

What does "...***updating*** ..." mean?

Does "...***updating*** ..." mean that the DC-balancing circuit has the capability to *write current/new data/information* into a memory?

This is ***not*** necessarily true for a memory such as ROM.

The above limitation is not only rejected under 35 U.S.C. 112 2nd ¶ but also invoked 35 U.S.C. 112 1st ¶ since there is no disclosure of "...***a/the running total***..." in the originally filed specification.

To further advance prosecution, the Examiner interprets "...***updating*** ..." in agreement with the Specification.

Appropriate correction is required.

Claim Rejections - 35 USC § 102

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

3. Claims **1-3, 7-9,** and **13-14** are rejected under 35 U.S.C. 102(e) as being anticipated by **Handschy et al. (US Patent No. 6507330).**

Regarding Claim **1**, (Currently amended) **Handschy et al.** teach a display apparatus for displaying an image, the display apparatus comprising:

a matrix display device comprising a plurality of pixels *(Col. **5**, Ln. **6-17**)* having electrodes *(Col. **5**, Ln. **27-34**)*, an optical state of each pixel being defined by particles

moving in a fluid between the electrodes *(Col. **8**, Ln. **13**-**19**, FIG. **1**)* dependent on parameters selected from at least one of a value of a drive voltage, a polarity of the drive voltage, and a duration of a drive period *(Col. **11**, Ln. **2**-**14**, FIG. **4**, i.e. magnitude, duration, or frequency)* during which the drive voltage is present across the electrodes of the pixel *(Col. **11**, Ln. **2**-**14**, FIG. **4**)*;

a driver *(Col. **9**, Ln. **53**-**55**, i.e. the image-producing electric fields)* for supplying a sequence of the drive voltages across the electrodes of the pixel during corresponding successive drive periods *(Col. **9**, Ln. **17**-**39**, FIG. **11**)*, each sequence of the drive voltages *(Col. **9**, Ln. **17**-**39**, FIG. **11**, i.e. +/-1.5V , +/-3.0V and 2.70/1.35 s)* is applied according to input image data that produces the displayed image *(Col. **14**, Ln. **4**-**14**, FIG. **14**)*; and

a DC-balancing circuit *(Col. **9**, Ln. **27**-**30**, i.e. FLC **38**)* comprising a controller *(Col. **8**, Ln. **58**-**63**, Col. **9**, Ln. **2**-**14**, FIGs. **2A**-**2C**, i.e. **VLSI**)* adjusting at least one of the parameters for determining a time-average value of the drive voltages *(Col. **13**, Ln. **36**-**56**, FIGs. **11**-**13**, e.g. as shown in FIG. 11, the magnitude of the first 2.7ms period is ± 1.5V for each of the nine durations, however, the magnitude and duration is adjusted; i.e. the magnitude of the second 1.35ms period (exactly 1/2 of the first period) is ± 3.0V (exactly double the first magnitude))* for the pixel, the time-average value of the drive voltage for consecutive fields of the pixel is adjusted substantially to zero *(Col. **13**, Ln. **36**-**56**, FIGs. **11**-**13**, i.e. the sum of the products of the magnitudes and the durations of the first and second periods is equal to zero)* while the pixel is being driven according to

the input image data that produces the displayed image *(Col. **13**, Ln. **36-56**, FIGs. **11-13**)*,

wherein the parameters are adjusted in steps corresponding to sub-fields of the field of the pixel *(Col. **13**, Ln. **36-56**, FIGs. **11-13**)*.

Regarding Claim **2**, (Currently amended) **Handschy et al.** teach the display apparatus as claimed in claim 1, wherein the DC- balancing circuit further comprises a memory, and wherein the controller is adapted for

updating and storing in the memory, a running total of a product of the duration of said drive period and the value of the drive voltage supplied during said drive period to each pixel during each drive period *(Col. **13**, Ln. **36-56**, FIGs. **11-13**, e.g. as shown in FIG. 11, the magnitude of the first 2.7ms period is ± 1.5V for each of the nine durations, however, the magnitude and duration is adjusted; i.e. the magnitude of the second 1.35ms period (exactly 1/2 of the first period) is ± 3.0V (exactly double the first magnitude))*, and

adapting at least one of the value of the drive voltage and the duration of the drive period to obtain the running total as near to zero as possible, the running total corresponding to the time-average value *(Col. **13**, Ln. **36-56**, FIGs. **11-13**, i.e. the sum of the products of the magnitudes and the durations of the first and second periods is equal to zero)*.

Regarding Claim **3**, (Currently amended) **Handschy et al.** teach the display apparatus as claimed in claim 1, further comprising a control circuit for driving the matrix display device in a sub-field mode wherein grey scales corresponding to the

sub-field of each pixel are determined by a plurality of sub-fields receiving the drive voltage during the corresponding field, and wherein the drive period is the duration of the plurality of sub-fields receiving the drive voltage *(Col. **11**, Ln. **2-9**, FIG. **4**)*.

Regarding Claim **7**, (Currently amended) **Handschy et al.** teach the display apparatus as claimed in claim 2, wherein after an initial period of time required to obtain a desired coloration of the pixel, the desired coloration is substantially independent from the duration of the drive period, and wherein the controller is adapted for controlling the duration of the drive period to be longer than the initial period when the running total indicates that a polarity of the drive voltage is opposite to a plurality of an initial drive voltage corresponding to the initial period *(Col. **12**, Ln. **33-41**, FIG. **8**)*.

Regarding Claim **8**, (Currently amended) **Handschy et al.** teach the display apparatus as claimed in claim 7, wherein the controller is adapted for controlling the duration of the drive period not to exceed the initial I period when the initial period causes the running total to change sign *(Col. **13**, Ln. **36-50**, FIG. **11**)*.

Regarding Claim **9**, (Currently amended) **Handschy et al.** teach the display apparatus as claimed in claim 2, wherein after an initial period of time required to obtain the a desired coloration of the pixel, the desired coloration is substantially independent from the duration of the drive period, and wherein the controller is adapted for controlling the duration of the drive period to be substantially identical to the initial period when the running total indicates that a polarity of the drive voltage is the same as a plurality of an initial drive voltage corresponding to the initial period *(Col. **13**, Ln. **23-35**, FIGs. **11-13**)*.

Regarding Claim **13**, (Currently amended) **Handschy et al.** teach a method of displaying an image by driving a matrix display device comprising a plurality of pixels *(Col. **5**, Ln. **6-17**)*, an optical state of each pixel being defined by particles moving in a fluid between electrodes *(Col. **8**, Ln. **13-19**, FIG. **1**)* dependent on parameters including a value of a drive voltage, a polarity of the drive voltage and a duration of a drive period during which the drive voltage is present across the electrodes of the pixel *(Col. **11**, Ln. **2-14**, FIG. **4**, i.e. magnitude, duration, or frequency)*, the method comprising acts of:

supplying a sequence of the drive voltages across the electrodes of each pixel during corresponding successive drive periods *(Col. **9**, Ln. **17-39**, FIG. **11**)*, each of the sequence of drive voltages are applied according to input image data that produces the displayed image *(Col. **13**, Ln. **36-56**, FIGs. **11-13**)*;

adjusting at least one of the parameters *(Col. **11**, Ln. **2-14**, FIG. **4**, i.e. magnitude, duration, or frequency)* to set a time-average value of the drive voltage for the pixel *(Col. **11**, Ln. **2-14**, FIG. **4**)*; and for

obtaining a substantially zero time-average value of the drive voltage across the pixel *(Col. **13**, Ln. **36-56**, FIGs. **11-13**, i.e. the sum of the products of the magnitudes and the durations of the first and second periods is equal to zero)* while the pixel is being driven according to the input image data that produces the displayed image *(Col. **13**, Ln. **36-56**, FIGs. **11-13**)*,

wherein the time-average value is based on a product of the value of the drive voltage and the duration of the drive period in a corresponding drive period of a

previous consecutive field of the pixel *(Col. **13**, Ln. **36-56**, FIGs. **11-13**, i.e. the sum of the products of the magnitudes and the durations of the first and second periods is equal to zero)*, parameters are adjusted in steps corresponding to sub-fields of the field of the pixel that produces the displayed image *(Col. **13**, Ln. **36-56**, FIGs. **11-13**)*.

Regarding Claim **14**, (Currently amended) **Handschy et al.** teach a display apparatus for displaying a plurality of images, the display apparatus comprising:

a matrix display device comprising a plurality of pixels *(Col. **5**, Ln. **6-17**)* having electrodes *(Col. **5**, Ln. **27-34**)*, an optical state of each pixel being defined by particles moving in a fluid between the electrodes dependent on parameters selected from at least one of a value of a drive voltage, a polarity of the drive voltage, and a duration a drive period *(Col. **11**, Ln. **2-14**, FIG. **4**, i.e. magnitude, duration, or frequency)* during which the drive voltage is present across the electrodes of the pixel *(Col. **11**, Ln. **2-14**, FIG. **4**)*;

a driver *(Col. **9**, Ln. **53-55**, i.e. the image-producing electric fields)* for supplying a sequence of the drive voltages across the electrodes of the pixel during corresponding successive drive periods *(Col. **9**, Ln. **17-39**, FIG. **11**)*, each sequence of the drive voltages *(Col. **9**, Ln. **17-39**, FIG. **11**, i.e. +/-1.5V , +/-3.0V and 2.70/1.35 s)* is applied according to input image data that produces one of the plurality of displayed images *(Col. **14**, Ln. **4-14**, FIG. **14**)*; and

a DC-balancing circuit *(Col. **9**, Ln. **27-30**, i.e. FLC **38**)* comprising a controller *(Col. **8**, Ln. **58-63**, Col. **9**, Ln. **2-14**, FIGs. **2A-2C**, i.e. **VLSI**)* for adjusting at least one of the parameters to set a time-average value for each pixel to adjust at least one of the

value of the drive voltage applied during a subsequent sub-field drive period and a duration of the subsequent sub-field drive period *(Col. **13**, Ln. **36-56**, FIGs. **11-13**, e.g. as shown in FIG. 11, the magnitude of the first 2.7ms period is ± 1.5V for each of the nine durations, however, the magnitude and duration is adjusted; i.e. the magnitude of the second 1.35ms period (exactly 1/2 of the first period) is ± 3.0V (exactly double the first magnitude))* while the pixel is being driven by subsequent input image data that produces a subsequent one of the plurality of displayed images *(Col. **13**, Ln. **36-56**, FIGs. **11-13**)*, to compensate for the drive voltage applied during a previous sub-field drive period and a duration of the previous sub-field drive period while the pixel is being driven by previous input image data that produces a previous one of the plurality of displayed images to obtain a substantially zero time-average value for each consecutive field of the pixel *(Col. **13**, Ln. **36-56**, FIGs. **11-13**, i.e. the sum of the products of the magnitudes and the durations of the first and second periods is equal to zero)*,

wherein the parameters are adjusted in steps corresponding to sub-fields of the field of the pixel *(Col. **13**, Ln. **36-56**, FIGs. **11-13**, e.g. as shown in FIG. 11, the magnitude of the first 2.7ms period is ± 1.5V for each of the nine durations, however, the magnitude and duration is adjusted; i.e. the magnitude of the second 1.35ms period (exactly 1/2 of the first period) is ± 3.0V (exactly double the first magnitude))*.

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) a patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

4. Claim **4** is rejected under 35 U.S.C. 103(a) as being unpatentable over **Handschy et al. (US Patent No. 6507330)** in view of **Admitted Prior Art (hereinafter APA).**

Regarding Claim **4,** (Currently amended) **Handschy et al.** teach the display apparatus as claimed in claim 2.

However, **Handschy et al.** do not teach the controller is adapted for comparing an absolute value of the running total with a threshold to supply a reset pulse to the pixel when an absolute value of the running total for the pixel surpasses the threshold.

In the same field of endeavor, **APA** teaches the controller is adapted for comparing an absolute value of the running total with a threshold to supply a reset pulse to the pixel when an absolute value of the running total for the pixel surpasses the threshold *(i.e. "... reset pulse operates in the **same** manner as in the **prior art** ..."; Col. **2**, **[0025]**)*.

It would have been obvious to a person having ordinary skill in the art at the time the invention was made to combine **Handschy et al.** teaching of a DC-balancing circuit further comprising a memory, a controller for adapting a value of at least one a drive voltage and a duration to obtain a value of a number being as near-to zero as possible, wherein the number corresponding to the time-average value with **APA** teaching of the controller is adapted for comparing an absolute value of the running total with a threshold to supply a reset pulse to the pixel when an absolute value of the running total

for the pixel surpasses the threshold *to improve overall image quality and reducing the image retention.*

5. Claim **5** is rejected under 35 U.S.C. 103(a) as being unpatentable over **Handschy et al. (US Patent No. 6507330)** in view of **Abramson et al. (US Patent No. 6950220).**

Regarding Claim **5,** (Currently amended) **Handschy et al.** teach the display apparatus as claimed in claim 2.

However, **Handschy et al.** do not teach the display device further comprises a temperature sensor for sensing a temperature of the pixel, and wherein the controller is further adapted for modifying the running total dependent on the temperature .

In the same field of endeavor, **Abramson et al.** teach the display device further comprises a temperature sensor for sensing a temperature of the pixel, and wherein the controller is further adapted for modifying the running total dependent on the temperature (Col. **20**, Ln. **2-7**).

It would have been obvious to a person having ordinary skill in the art at the time the invention was made to combine **Handschy et al.** teaching of a DC-balancing circuit further comprising a memory, a controller for adapting a value of at least one a drive voltage and a duration to obtain a value of a number being as near-to zero as possible, wherein the number corresponding to the time-average value with **Abramson et al.** teaching of a temperature sensor for sensing a temperature of the pixel, and wherein

the controller is further adapted for modifying the running total dependent on the temperature *to improve overall image quality and reducing the image retention.*

6. Claims **6** and **10-12** are rejected under 35 U.S.C. 103(a) as being unpatentable over **Handschy et al. (US Patent No. 6507330)** in view of **Katase (US Patent No. 6961047).**

Regarding Claim **6,** (Currently amended) **Handschy et al.** teach the display apparatus as claimed in claim 2.

However, **Handschy et al.** do not teach the controller is adapted for modifying the running total non-linearly dependent on the value of the drive voltage .

In the same field of endeavor, **Katase** teaches the controller is adapted for modifying the running total non-linearly dependent on the value of the drive voltage *(Col. **20**, Ln. **2-7**).*

It would have been obvious to a person having ordinary skill in the art at the time the invention was made to combine **Handschy et al.** teaching of a DC-balancing circuit further comprising a memory, a controller for adapting a value of at least one a drive voltage and a duration to obtain a value of a number being as near-to zero as possible, wherein the number corresponding to the time-average value with **Katase** teaching of the controller is adapted for modifying the running total non-linearly dependent on the value of the drive voltage *to improve overall image quality and reducing the image retention.*

Regarding Claim **10**, (Previously presented) **Handschy et al.** teach the display apparatus as claimed in claim 7.

However, **Handschy et al.** do not teach the display device is an electrophoretic display, and the pixel comprises two switching electrodes and a further electrode, the driver being adapted for supplying the sequence of drive voltages to the two switching electrodes and the further electrode controlling intermediate optical states of the pixel.

In the same field of endeavor, **Katase** teaches teach the display device is an electrophoretic display, and the pixel comprises two switching electrodes and a further electrode *(Col. **4**, Ln. **60-68**, Col. **5**, Ln. **1-7**, FIG.**1**, & FIG. **2**, i.e.**102**, **104** & **201**)*, the driver being adapted for supplying the sequence of drive voltages to the two switching electrodes and the further electrode controlling intermediate optical states of the pixel *(Col. **6**, Ln. **16-25**, FIG. **3**)*.

It would have been obvious to a person having ordinary skill in the art at the time the invention was made to combine **Handschy et al.** teaching of a desired coloration of the pixel being independent on the duration of the drive period, and the driver for controlling the duration of the drive period to be longer than the initial period when the number indicating that a polarity reversed with **Katase** teaching of including an electrophoretic display, wherein the pixel comprises two switching electrodes and a further electrode, and the driver for supplying a sequence of drive voltages to the to control the pixel's optical states *improve overall image quality and reducing the image retention for an electrophoretic display.*

Regarding Claim **11**, (Previously presented) **Handschy et al.** teach the display apparatus as claimed in claim 7, wherein the driver is adapted for supplying the sequence of drive voltages between the at least two electrodes for setting a grey scale of the pixel by providing a drive voltage lower than a usually applied drive voltage which sets a grey level by modulating the duration of the drive period during which the usually applied drive voltage is present *(Col. **12**, Ln. **33-41**, FIG. **8**).*

However, **Handschy et al.** do not teach wherein the display device is an electrophoretic display, and wherein the pixel comprises at least two electrodes.

In the same field of endeavor, **Katase** teaches the display device is an electrophoretic display, and wherein the pixel comprises at least two electrodes *(Col. **4**, Ln. **60-68**, Col. **5**, Ln. **1-7**, FIG.**1**, & FIG. **2**).*

It would have been obvious to a person having ordinary skill in the art at the time the invention was made to combine **Handschy et al.** teaching of a desired coloration of the pixel being independent on the duration of the drive period, and the driver for controlling the duration of the drive period to be longer than the initial period when the number indicating that a polarity reversed with **Katase** teaching of including an electrophoretic display, and wherein the pixel comprises at least two electrodes *improve overall image quality and reducing the image retention for an electrophoretic display*.

Regarding Claim **12**, (Previously presented) **Handschy et al.** teach the display apparatus as claimed in claim 1.

However, **Handschy et al.** do not teach the display device is an electrophoretic display.

In the same field of endeavor, **Katase** teaches the display device is an electrophoretic display (Col. **4**, Ln. **60**-**68**, Col. **5**, Ln. **1**-**7**, FIG.**1**, & FIG. **2**).

It would have been obvious to a person having ordinary skill in the art at the time the invention was made to combine **Handschy et al.** teaching of a matrix display device comprising a plurality of pixels, an optical state of each pixel dependent polarity of a drive voltage and a duration, a driver for supplying a sequence of drive voltages and periods corresponding to input image data, and a DC-balancing circuit determining a time-average value for each pixel, to adjust one of the drive voltage and the duration to obtain a substantially zero value of the time-average for each consecutive field of the pixel, wherein at least one of the drive voltage and the duration being adjusted in steps corresponding to sub-fields of the pixel with **Katase** teaching of the display device being an electrophoretic display *improve overall image quality and reducing the image retention for an electrophoretic display.*

Response to Arguments/Amendments/Remarks

7. Applicant's arguments filed 08/23/2010 have been fully considered but they are not persuasive.

First of all, applicant argues that **Handschy et al.** do not teach *"...adjusting at least one of the parameters for determining a time-average value of the drive voltages for the pixel, the time-average value of the drive voltage for consecutive fields of the pixel is adjusted substantially to zero while the pixel is being driven according to the*

input image data that produces the displayed image…". However, the Examiner respectfully disagrees because **Handschy et al.** teach

adjusting at least one of the parameters for determining a time-average value of the drive voltages *(Col. **13**, Ln. **36-56**, FIGs. **11-13**, e.g. as shown in FIG. 11, the magnitude of the first 2.7ms period is ± 1.5V for each of the nine durations, however, the magnitude and duration is adjusted; i.e. the magnitude of the second 1.35ms period (exactly 1/2 of the first period) is ± 3.0V (exactly double the first magnitude))* for the pixel, the time-average value of the drive voltage for consecutive fields of the pixel is adjusted substantially to zero *(Col. **13**, Ln. **36-56**, FIGs. **11-13**, i.e. the sum of the products of the magnitudes and the durations of the first and second periods is equal to zero)* while the pixel is being driven according to the input image data that produces the displayed image *(Col. **13**, Ln. **36-56**, FIGs. **11-13**).*

Secondly, applicant argues that **Handschy et al.** and **Katase** do not teach Claim 10 limitation "…the pixel comprises two switching electrodes and a further electrode…". However, the Examiner respectfully disagrees because **Katase** teaches

the pixel comprises two switching electrodes and a further electrode *(Col. **4**, Ln. **60-68**, Col. **5**, Ln. **1-7**, FIG.**1**, & FIG. **2**, i.e.**102**, **104** & **201**).*

Thirdly, Claims 13 and 14 are rejected under the same reference and rationale as Claim 1. See above rejections for details.

Finally, dependent claims are properly rejected as shown above.

Conclusion

The prior art(s) made of record and not relied upon (is)/are considered pertinent to applicant's disclosure: Gates; Holly G. (US Patent/PGPub. No. US 7202847).

Any inquiry concerning this communication or earlier communications from the examiner should be directed to VINH T. LAM whose telephone number is (571)270-3704. The examiner can normally be reached on M-F (7:00-4:30) EST.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Amare Mengistu can be reached on (571) 272-7674. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

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